

PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Suzanne Cory, et al.	Examiner:	TO BE ASSIGNED
Serial No.:	TO BE ASSIGNED	Art Unit:	TO BE ASSIGNED
Filed:	Herewith	Docket:	11686a
For:	NOVEL MAMMALIAN GENE, BCL-W, BELONGS TO THE BCL-2 FAMILY OF APOPTOSIS-CONTROLLING GENES	Date:	August 9, 2001

Assistant Commissioner for Patents
United States Patent and Trademark Office
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

In connection with the filing of the above-identified application, kindly enter the following preliminary amendments.

In the specification:

Please insert the following text at page 1, line 3, underneath the title:

--Cross-Reference to Related Application

This application is a divisional of Serial No. 09/155,327, filed on March 29, 1999,

CERTIFICATE OF MAILING BY "EXPRESS MAIL"

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Date of Deposit: August 9, 2001

I hereby certify that this Preliminary Amendment is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above and is addressed to the Assistant Commissioner of Patents and Trademarks, Washington, DC 20231.

Dated: August 9, 2001

Janet Grossman

which was originally filed as International Application No. PCT/AU97/00199 on March 27, 1997.--

Please delete the Sequence Listing at pages 45-51 of the specification, and insert therefor the attached substitute copy of the Sequence Listing.

In the Drawings:

Please delete Figures 9A to 9B(iv) (drawing sheets 17/26 to 26/26), and replace therewith the attached substitute Figure 9A and Figure 9B.

In the Claims:

Please cancel claims 1-5 without prejudice.

REMARKS

The specification has been amended to add the cross reference to the parent application, Serial No. 09/155,327.

The Sequence Listing in the specification has been replaced with the attached substitute Sequence Listing. By way of the substitute Sequence Listing, Applicants have inserted the updated information with respect to the title of the invention and the prior application data. The sequences of SEQ ID NOS: 1 to 4 have been reformatted to conform with the sequence rules under 37 C.F.R. §1.821 with respect to unusual nucleotides and amino acid residues. In addition, Applicants have corrected certain clerical errors present in the original Sequence Listing.

More specifically, Applicants have corrected two clerical errors in the nucleotide sequence of SEQ ID NO: 6 (human bcl-w) at nucleotide position 301, 404 and 405. The protein sequence in SEQ ID NO: 7 has been amended to correct two clerical errors at positions 101 and 135. In addition, Applicants have corrected certain clerical errors in the nucleotide sequence of

SEQ ID NO: 8 (murine bcl-w) and in the protein sequence of SEQ ID NO: 9. These corrections are indicated in the attached marked-up copy of the Sequence Listing.

Applicants respectfully submit that the foregoing amendment does not introduce new matter. More specifically, the protein sequence of SEQ ID NO: 7 (human bcl-w) as amended is set forth in Figure 8 as originally filed. The protein sequence of SEQ ID NO: 9 (murine bcl-w) as amended is set forth in Figure 1 as originally filed. In addition, these protein sequences find support in Figures 9A and 9B of the priority document, Australian Provisional Application PN8965, filed on March 27, 1996. A courtesy copy of such priority document is enclosed for the Examiner's convenience (**Exhibit A**). The nucleotide sequences of SEQ ID NO: 6 and SEQ ID NO: 8 as amended are also disclosed in Figure 9A and 9B, respectively, of the priority document.

Applicants further respectfully submit that Figures 9A to 9B(iv), which set forth the nucleotide and protein sequences of human bcl-w and murine bcl-w, contain the same typographical errors as the original Sequence Listing. Accordingly, Applicants submit herewith substitute sheets of Figures 9A and 9B to replace the original drawing sheets of Figures 9A to 9B(iv). The substitute drawing of Figure 9B discloses the nucleotide sequence (SEQ ID NO: 6) and the encoded protein sequence (SEQ ID NO: 7) of human bcl-w. The substitute drawing of Figure 9B discloses the nucleotide sequence (SEQ ID NO: 8) and the encoded protein sequence (SEQ ID NO: 9) of murine bcl-w. These substitute sheets of drawings do not introduce new matter and are fully supported by the application as filed and by the priority document.

Applicants respectfully submit that the foregoing amendments do not introduce new subject matter.

Claims 1-5 have been canceled without prejudice.

Attached hereto is a marked-up copy of the amendment to the specification and the claims, captioned "Version with Markings to Show Changes Made"; a substitute paper and an initial computer-readable copy of the Sequence Listing; a statement under §1.821(f) verifying that the content of the substitute paper copy and the initial computer-readable copy of the

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Sequence Listing are the same; substitute sheets for Figures 9A and Figures 9B; and the priority document as Exhibit A.

It is respectfully submitted that the present case is in condition for allowance which action is earnestly solicited.

Respectfully submitted,



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Registration No. 31,346

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FSD/XZ:ab

Enclosures:

Version with Markings to Show Changes Made;
Substitute paper and initial computer-readable copy of the Sequence Listing;
Statement under §1.821(f);
Substitute sheets for Figures 9A and Figures 9B; and
Exhibit A.

Serial No.: TO BE ASSIGNED
Date: August 9, 2001

Version with Markings to Show Changes Made

In the Claims:

Claims 1-5 have been canceled.

In the Specification:

Please insert the following text at page 1, line 3, underneath the title:

--Cross-Reference to Related Application

This application is a divisional of Serial No. 09/155,327, filed on March 29, 1999,

which was originally filed as International Application No. PCT/AU97/00199 on March 27,

1997.--

Please amend the Sequence Listing as follows (beginning on the next page).

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- 45 -

SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT: (Other than US) AMRAD OPERATIONS PTY LTD
(US only) Suzanne Cory, Jerry McKee Adams, Leonie Gibson and
Sean P Holmgreen

- (ii) TITLE OF INVENTION: ~~THERAPEUTIC MOLECULES~~
A Novel Mammalian Gene, bcl-w, belongs to the bcl-2 family of Apoptosis-controlling genes.

- (iii) NUMBER OF SEQUENCES: 9

- (iv) ~~CORRESPONDENCE ADDRESS:~~
(A) ADDRESSEE: DAVIES COLLISON CAVE
(B) STREET: 1 LITTLE COLLINS STREET
(C) CITY: MELBOURNE
(D) STATE: VICTORIA
(E) COUNTRY: AUSTRALIA
(F) ZIP: 3000

- (v) ~~COMPUTER READABLE FORM:~~
(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) ~~SOFTWARE: PatentIn Release #1.0, Version #1.25~~

- Prior*
(vi) ~~CURRENT~~ APPLICATION DATA:
(A) APPLICATION NUMBER: ~~PCT-INTERNATIONAL~~ 09/155,327
(B) FILING DATE: 27-MAR-1997

- (vi) PRIOR APPLICATION DATA:
(A) APPLICATION NUMBER: PN 8965
(B) FILING DATE: 27-MAR-1996

- (viii) ~~ATTORNEY/AGENT INFORMATION:~~
(A) NAME: HUGHES DR, E JOHN L
(C) REFERENCE/DOCKET NUMBER: EJH/EK

- (ix) TELECOMMUNICATION INFORMATION:
(A) TELEPHONE: +61 3 9254 2777
(B) ~~TELEFAX: +61 3 9254 2770~~

- 46 -

(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 33 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

GCTCTAGAAC TGGGG~~(A/C)~~G~~(A/G)~~T~~(G/T)~~GCCTT ~~(C/T)~~TT

33

n h n r n n y

wherein n is nosine at position 16, 19, 22 and 25.

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Xaa

Asn Trp Gly Arg ~~(Ile/Val)~~ Val Ala Phe Phe

⁵

wherein Xaa is Ile or Val.

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 31 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

GGAATTCCCA GCC~~(C/T)~~~~(G/T)~~ TCTTGGATCC A

31

n n k n

wherein n is nosine at position 14, 17 and 20.

- 47 -

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Trp Ile Gln (~~Asp/Glu~~) (~~Asn/Gln~~) Gly Gly Trp
 Xaa 5 Xaa

wherein Xaa at position 4 is Asp or Glu, and Xaa at position 5 is Asn or Gln.

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 14 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Met Ala Thr Pro Ala Ser Thr Pro Asp Thr Arg Ala Leu Val
 5 10

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 583 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 1..583

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

- 48 -

ATG GCG ACC CCA GCC TCG GCC CCA GAC ACA CGG GCT CTG GTG GCA GAC	48
Met Ala Thr Pro Ala Ser Ala Pro Asp Thr Arg Ala Leu Val Ala Asp	
1 5 10 15	
TTT GTA GGT TAT AAG CTG AGG CAG AAG GGT TAT GTC TGT GGA GCT GGC	96
Phe Val Gly Tyr Lys Leu Arg Gln Lys Gly Tyr Val Cys Gly Ala Gly	
20 25 30	
CCC GGG GAG GGC CCA GCA GCT GAC CCG CTG CAC CAA GCC ATG CGG GCA	144
Pro Gly Glu Gly Pro Ala Ala Asp Pro Leu His Gln Ala Met Arg Ala	
35 40 45	
GCT GGA GAT GAG TTC GAG ACC CGC TTC CGG CGC ACC TTC TCT GAT CTG	192
Ala Gly Asp Glu Phe Glu Thr Arg Phe Arg Arg Thr Phe Ser Asp Leu	
50 55 60	
GCG GCT CAG CTG CAT GTG ACC CCA GGC TCA GCC CAG CAA CGC TTC ACC	240
Ala Ala Gln Leu His Val Thr Pro Gly Ser Ala Gln Gln Arg Phe Thr	
65 70 75 80	
CAG GTC TCC GAC GAA CTT TTT CAA GGG GGC CCC AAC TGG GGC CGC CTT	288
Gln Val Ser Asp Glu Leu Phe Gln Gly Gly Pro Asn Trp Gly Arg Leu	
85 90 95	
GTA GCC TTC TTT CTC TTT GGG GCT GCA CTG TGT GCT GAG AGT GTC AAC	336
Val Ala Phe Phe Leu Phe Gly Ala Ala Leu Cys Ala Glu Ser Val Asn	
100 <i>Val</i> 105 110	
AAG GAG ATG GAA CCA CTG GTG GGA CAA GTG CAG GAG TGG ATG GTG GCC	384
Lys Glu Met Glu Pro Leu Val Gly Gln Val Gln Glu Trp Met Val Ala	
115 120 125	
TAC CTG GAG ACG CGG CTG GTC ^{CT} GAC TGG ATC CAC AGC AGT GGG GGC TGG	432
Tyr Leu Glu Thr Arg Leu Val ^{Ala} Asp Trp Ile His Ser Ser Gly Gly Trp	
130 135 140	
GCG GAG TTC ACA GCT CTA TAC GGG GAC GGG GCC CTG GAG GAG GCG CGG	480
Ala Glu Phe Thr Ala Leu Tyr Gly Asp Gly Ala Leu Glu Glu Ala Arg	
145 150 155 160	
CGT CTG CGG GAG GGG AAC TGG GCA TCA GTG AGG ACA GTG CTG ACG GGG	528
Arg Leu Arg Glu Gly Asn Trp Ala Ser Val Arg Thr Val Leu Thr Gly	
165 170 175	
GCC GTG GCA CTG GGG GCC CTG GTA ACT GTA GGG GCC TTT TTT GCT AGC	576
Ala Val Ala Leu Gly Ala Leu Val Thr Val Gly Ala Phe Phe Ala Ser	
180 185 190	
AAG TGA A	583
Lys *	

- 49 -

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 19³ amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

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Met Ala Thr Pro Ala Ser Ala Pro Asp Thr Arg Ala Leu Val Ala Asp
 1             5             10             15

Phe Val Gly Tyr Lys Leu Arg Gln Lys Gly Tyr Val Cys Gly Ala Gly
      20             25             30

Pro Gly Glu Gly Pro Ala Ala Asp Pro Leu His Gln Ala Met Arg Ala
      35             40             45

Ala Gly Asp Glu Phe Glu Thr Arg Phe Arg Arg Thr Phe Ser Asp Leu
      50             55             60

Ala Ala Gln Leu His Val Thr Pro Gly Ser Ala Gln Gln Arg Phe Thr
      65             70             75             80

Gln Val Ser Asp Glu Leu Phe Gln Gly Gly Pro Asn Trp Gly Arg Leu
      85             90             95

Val Ala Phe Phe ValLeu Phe Gly Ala Ala Leu Cys Ala Glu Ser Val Asn
      100             105             110

Lys Glu Met Glu Pro Leu Val Gly Gln Val Gln Glu Trp Met Val Ala
      115             120             125

Tyr Leu Glu Thr Arg Leu AlaVal Asp Trp Ile His Ser Ser Gly Gly Trp
      130             135             140

Ala Glu Phe Thr Ala Leu Tyr Gly Asp Gly Ala Leu Glu Glu Ala Arg
      145             150             155             160

Arg Leu Arg Glu Gly Asn Trp Ala Ser Val Arg Thr Val Leu Thr Gly
      165             170             175

Ala Val Ala Leu Gly Ala Leu Val Thr Val Gly Ala Phe Phe Ala Ser
      180             185             190

Lys *
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(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 582 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

- 50 -

(ii) MOLECULE TYPE: DNA

(ix) FEATURE:

(A) NAME/KEY: CDS

(B) LOCATION: 1..582

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

ATG ^G CCG ACC CCA GCC TCA ACC CCA GAC ACA ^G CG ^G GCT CTA GTG GCT GAC	48
Met Pro Thr Pro Ala Ser Thr Pro Asp Thr Arg Ala Leu Val Ala Asp	
1 Ala 5 10 15	
TTT GTA GGC TAT AGG CTG AGG CAG AAG GGT TAT GTC TGT GGA GCT GG ^C	96
Phe Val Gly Tyr Arg Leu Arg Gln Lys Gly Tyr Val Cys Gly Ala Gly	
20 25 30	
CCT GGG GAA GGC CCA GCC GCC GAC CCG CTG CAC CAA GCC ATG CGG GCT	144
Pro Gly Glu Gly Pro Ala Ala Asp Pro Leu His Gln Ala Met Arg Ala	
35 40 45	
GCT GGA GAC GAG TTT GAG ACC CGT TTC CGC CGC ACC TTC TCT GAC CTG	192
Ala Gly Asp Glu Phe Glu Thr Arg Phe Arg Arg Thr Phe Ser Asp Leu	
50 55 60	
GCC GCT CAG CTA CAC GTG ACC CCA GGC TCA GCC CAG CAA CGC TTC ACC	240
Ala Ala Gln Leu His Val Thr Pro Gly Ser Ala Gln Gln Arg Phe Thr	
65 70 75 80	
CAG GTT TCC GAC GAA CTT TTC CAA GGG GGC CCT AAC TGG GGC CGT CTT	288
Gln Val Ser Asp Glu Leu Phe Gln Gly Gly Pro Asn Trp Gly Arg Leu	
85 90 95	
GTG GCA TTC TTT GTC TTT GGG GCT GCC CTG TGT GCT GAG AGT GTC AAC	336
Val Ala Phe Phe Val Phe Gly Ala Ala Leu Cys Ala Glu Ser Val Asn	
100 105 110	
AAA GAA ATG GAG CCT TTG GTG GGA CAA ^G GT ^G CAG GAT TGG ^G AT ^G GTG GCC	384
Lys Glu Met Glu Pro Leu Val Gly Gln Val Gln Asp Trp Ile Val Ala	
115 120 125 Met	
TAC CTG GAG ACA CGT CTG GCT GAC TGG ATC CAC AGC AGT GGC GGC TGG	432
Tyr Leu Glu Thr Arg Leu Ala Asp Trp Ile His Ser Ser Gly Gly Trp	
130 135 140	
GCG ^G GAT ^G TTC ACA GCT CTA TAC GGG GAC GGG GCC CTG GAG ^G GAT ^G GCA CGG	480
Ala Asp Phe Thr Ala Leu Tyr Gly Asp Gly Ala Leu Glu Asp Ala Arg	
145 Glu 150 155 Glu 160	
CGT CTG CGG GAG ^G GG ^G AAC TGG GCA ^C TAA ^C GTG ^G AG ^G ACA GTG ^C GTG ^C ACG GGG	528
Arg Leu Arg Glu Gly Asn Trp Ala Val ^{Ser} Ser Thr Val ^{Leu} Val Thr Gly	
165 170 ^{Arg} 175	
GCC GTG GCA CTG GGG GCC CTG GTA ACT GTA GGG GCC TTT TTT GCT AGC	576

- 51 -

Ala Val Ala Leu Gly Ala Leu Val Thr Val Gly Ala Phe Phe Ala Ser
 180 185 190

AAG TGA
 Lys

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(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 193 amino acids
 (B) TYPE: amino acid
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Met ~~Pro~~^{Ala} Thr Pro Ala Ser Thr Pro Asp Thr Arg Ala Leu Val Ala Asp
 1 5 10 15

Phe Val Gly Tyr Arg Leu Arg Gln Lys Gly Tyr Val Cys Gly Ala Gly
 20 25 30

Pro Gly Glu Gly Pro Ala Ala Asp Pro Leu His Gln Ala Met Arg Ala
 35 40 45

Ala Gly Asp Glu Phe Glu Thr Arg Phe Arg Arg Thr Phe Ser Asp Leu
 50 55 60

Ala Ala Gln Leu His Val Thr Pro Gly Ser Ala Gln Gln Arg Phe Thr
 65 70 75 80

Gln Val Ser Asp Glu Leu Phe Gln Gly Gly Pro Asn Trp Gly Arg Leu
 85 90 95

Val Ala Phe Phe Val Phe Gly Ala Ala Leu Cys Ala Glu Ser Val Asn
 100 105 110

Lys Glu Met Glu Pro Leu Val Gly Gln Val Gln Asp Trp ~~Leu~~^{Met} Val Ala
 115 120 125

Tyr Leu Glu Thr Arg Leu Ala Asp Trp Ile His Ser Ser Gly Gly Trp
 130 135 140

Ala ~~Asp~~^{Glu} Phe Thr Ala Leu Tyr Gly Asp Gly Ala Leu Glu ~~Asp~~^{Glu} Ala Arg
 145 150 155 160

Arg Leu Arg Glu Gly Asn Trp Ala ~~Ser~~^{Ser} Val ~~Ser~~^{Arg} Thr Val ~~Val~~^{Leu} Thr Gly
 165 170 175

Ala Val Ala Leu Gly Ala Leu Val Thr Val Gly Ala Phe Phe Ala Ser
 180 185 190

Lys